

**Reconfigurable Wavelength Multiplexers and Filters Employing
Micromirror Array in a Gires-Tournois Interferometer
ABSTRACT OF THE DISCLOSURE**

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A reconfigurable optical device capable of filtering, multiplexing, and spectrometry, among other functions. The device has an array of micromirrors disposed under a floating reflector that is partially reflecting. The floating reflector is spaced apart from the micromirrors a certain distance. The micromirrors are each capable of independent vertical motion, and, optionally, tilting motion. In use, light is projected at an oblique angle into the space between the micromirrors. Each reflection from the floating reflector produces an emergent beam from the floating reflector. The emergent light beams are combined with a lens. As a direct result of this structure, different wavelengths are focused to different points in the focal plane of the lens. The focal point positions of the different wavelengths can be moved by manipulating the micromirrors. This allows for reconfigurable filtering, spectrometry, and multiplexing, among other applications.